

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A pulse width modulation driving apparatus for a light emitting diode, comprising:

a sawtooth wave generator for generating a sawtooth wave signal;

a comparator;

a field effect transistor [[FET]] having a gate terminal, a source terminal, and a drain terminal;

a power supply;

a first current limiting resistor and a second current limiting resistor; and

at least one light emitting diode serving as a load;

wherein a modulation signal and the sawtooth wave signal are input to the comparator, an output of the comparator is connected to [[a]] the gate terminal of the [[FET]] field effect transistor, the first resistor is connected between the power supply and [[a]] the source terminal of the [[FET]] field effect transistor, and [[a]] the drain terminal of the [[FET]] field effect transistor outputs a driving current through the second resistor to the load.

Claim 2 (currently amended): The pulse width modulation driving apparatus as described in claim 1, wherein the [[FET]] field effect transistor is an N-channel enhancement-type [[FET]] field effect transistor.

Claim 3 (currently amended): The pulse width modulation driving apparatus

as described in claim 1, wherein the [[FET]] field effect transistor is a P-channel enhancement-type [[FET]] field effect transistor.

Claim 4 (currently amended): The pulse width modulation driving apparatus as described in claim 1, wherein the [[FET]] field effect transistor is an N-channel depletion-type [[FET]] field effect transistor.

Claim 5 (currently amended): The pulse width modulation driving apparatus as described in claim 1, wherein the [[FET]] field effect transistor is a P-channel depletion-type [[FET]] field effect transistor.

Claim 6 (currently amended): A pulse width modulation driving apparatus assembly, comprising:

a field effect transistor [[EFT]] defining a gate terminal, a source terminal, and a drain terminal;

a power supply and a first current limiting resistor connected to the source terminal;

a light emitting diode [[LED]] array and a second current limiting resistor electrically connected to the drain terminal;

a comparator connected to the gate terminal; and

a modulation signal source[[:]] and a wave generator respectively connected to input terminals of the comparator;

wherein an equivalent driving current is provided on the drain terminal, which is proportional to an amplitude of a signal derived from the modulation signal source.

~~means respectively connected to said gate terminal and said source terminal for providing an equivalent driving current, on the drain terminal, which is proportional to amplitude of signal derived from the modulation signal source.~~

Claims 7-9 (canceled)

Claim 10 (currently amended): A method of providing a light emitting diode ~~[[LED]]~~ array with a linearly adjusted driving current, comprising steps of:

providing a field effect transistor ~~[[EFT]]~~ defining a gate terminal, a source terminal, and a drain terminal;

electrically connecting a light emitting diode ~~[[LED]]~~ array and a current limiting resistor ~~electrically~~ to the drain terminal;

electrically connecting a ~~modulation signal source~~ comparator to the gate terminal; and

electrically connecting a modulation signal source and a wave generator to input terminals of the comparator, respectively;

electrically connecting a power supply and another current limiting resistor to the source terminal; and

comparing the signals respectively from the modulation signal source and the wave generator in the comparator, and outputting a positive high level signal so as to turn on the field effect transistor;

wherein providing a driving current ~~provided~~ on the drain terminal for activating said ~~[[LED]]~~ light emitting diode array is changed linearly corresponding to a linear change of signals generated from the modulation signal source.

Claims 11-13 (canceled)

Claim 14 (new): The method as described in claim 10, wherein the comparing step further comprises the steps of: outputting a positive high level signal when a modulation signal is lower than a wave signal generated by the wave generator,

and outputting a zero level signal when a modulation signal is equal to or higher than a wave signal generated by the wave generator.